

<b>NOTICE OF REVISION (NOR)</b>  <b>This revision described below has been authorized for the document listed.</b>			<b>1. DATE</b> (YYMMDD) <b>93-11-18</b>	Form Approved OMB No. 0704-0188						
Public reporting burden for this collection is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSED. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/ PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.			<b>2. PROCURING ACTIVITY NO.</b>							
			<b>3. DODAAC</b>							
<b>4. ORIGINATOR</b>		<b>b. ADDRESS (Street, City, State, Zip Code)</b> Defense Electronics Supply Center 1507 Wilmington Pike Dayton, OH 45444-5270		<b>5. CAGE CODE</b> 67268						
<b>a. TYPED NAME (First, Middle Initial, Last) N. A.</b>		<b>7. CAGE CODE</b> 67268		<b>6. NOR NO.</b> 5962-R045-94  <b>8. DOCUMENT NO.</b> 85030						
<b>9. TITLE OF DOCUMENT</b>  MICROCIRCUIT, LINEAR, PERCISION VOLTAGE REFERENCES, THIN FILM, HYBRID.			<b>10. REVISION LETTER</b> <table border="1"> <tr> <td><b>a. CURRENT</b> D</td> <td><b>b. NEW</b> E</td> </tr> </table>		<b>a. CURRENT</b> D	<b>b. NEW</b> E				
<b>a. CURRENT</b> D	<b>b. NEW</b> E									
<b>11. ECP NO.</b>  N. A.										
<b>12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES</b> All										
<b>13. DESCRIPTION OF REVISION</b>  Sheet 1: Revisions ltr column; add "E". Revisions description column; add "Changes in accordance with NOR 5962-R045-94". Revisions date column; add "93-11-18". Revision level block; change "D" to "E". Rev status of sheets; For sheet 1 change "D" to "E" and for sheet 2 change "C" to "E".  Sheet 2: Paragraph 1.2,2, Under discriptive designator for outline letter C; add "or CDIP1-T14". Revision level block; chane "C" to "E".										
<b>14. THIS SECTION FOR GOVERNMENT USE ONLY</b>										
<b>a. (X one)</b>		<table border="1"> <tr> <td><b>X</b></td> <td>(1) Existing document supplemented by the NOR may be used in manufacture.</td> </tr> <tr> <td></td> <td>(2) Revised document must be received before manufacturer may incorporate this change.</td> </tr> <tr> <td></td> <td>(3) Custodian of master document shall make above revision and furnish revised document.</td> </tr> </table>			<b>X</b>	(1) Existing document supplemented by the NOR may be used in manufacture.		(2) Revised document must be received before manufacturer may incorporate this change.		(3) Custodian of master document shall make above revision and furnish revised document.
<b>X</b>	(1) Existing document supplemented by the NOR may be used in manufacture.									
	(2) Revised document must be received before manufacturer may incorporate this change.									
	(3) Custodian of master document shall make above revision and furnish revised document.									
<b>b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT</b>			<b>c. TYPED NAME (First, Middle Initial, Last)</b>							
<b>d. TITLE</b> Chief, Electronic Components Branch		<b>e. SIGNATURE</b> Kendall A. Cottongim		<b>f. DATE SIGNED</b> (YYMMDD) 93-11-18						
<b>15a. ACTIVITY ACCOMPLISHING REVISION</b>  DESC-ECT		<b>b. REVISION COMPLETED (Signature)</b> Gary Zahn		<b>c. DATE SIGNED</b> (YYMMDD) 93-11-18						

<b>NOTICE OF REVISION (NOR)</b>  This revision described below has been authorized for the document listed.		1. DATE (YYMMDD) 93-08-17	Form Approved OMB No. 0704-0188						
Public reporting burden for this collection is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/ PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.		2. PROCURING ACTIVITY NO.	3. DODAAC						
4. ORIGINATOR	b. ADDRESS (Street, City, State, Zip Code)  Defense Electronics Supply Center 1507 Wilmington Pike Dayton, OH 45444-5270	5. CAGE CODE 67268	6. NOR NO. 5962-R212-93						
a. TYPED NAME (First, Middle Initial, Last) N. A.		7. CAGE CODE 67268	8. DOCUMENT NO. 85030						
9. TITLE OF DOCUMENT  MICROCIRCUIT, LINEAR, PERCISION VOLTAGE REFERENCES, THIN FILM, HYBRID.		10. REVISION LETTER <table border="1"> <tr> <td>a. CURRENT C</td> <td>b. NEW D</td> </tr> </table>		a. CURRENT C	b. NEW D				
a. CURRENT C	b. NEW D								
11. ECP NO.  ECP-1									
12. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES All									
13. DESCRIPTION OF REVISION  Sheet 1: Revisions ltr column; add "D". Revisions description column; add "Changes in accordance with NOR 5962-R212-93". Revisions date column; add "93-08-17". Revision level block; delete "C" and substitute "D". Rev status of sheets; For sheets 1 and 4 delete "C" and substitute "D".  Sheet 4: Table I, I <sub>EE</sub> for device types 05 and 06, maximum limits column; delete "-9" and substitute "-14". Revision level block; delete "C" and substitute "D".  STANDARDIZED MILITARY DRAWING APPROVAL BULLETIN: Change vendor CAGE number "51640" to "34031". (6 places).									
14. THIS SECTION FOR GOVERNMENT USE ONLY									
a. (X one)	<table border="1"> <tr> <td>X</td> <td>(1) Existing document supplemented by the NOR may be used in manufacture.</td> </tr> <tr> <td></td> <td>(2) Revised document must be received before manufacturer may incorporate this change.</td> </tr> <tr> <td></td> <td>(3) Custodian of master document shall make above revision and furnish revised document.</td> </tr> </table>	X	(1) Existing document supplemented by the NOR may be used in manufacture.		(2) Revised document must be received before manufacturer may incorporate this change.		(3) Custodian of master document shall make above revision and furnish revised document.		
X	(1) Existing document supplemented by the NOR may be used in manufacture.								
	(2) Revised document must be received before manufacturer may incorporate this change.								
	(3) Custodian of master document shall make above revision and furnish revised document.								
b. ACTIVITY AUTHORIZED TO APPROVE CHANGE FOR GOVERNMENT		c. TYPED NAME (First, Middle Initial, Last)							
d. TITLE Chief, Electronic Components Branch	e. SIGNATURE  Kendall A. Cottongim		f. DATE SIGNED (YYMMDD) 93-08-17						
15a. ACTIVITY ACCOMPLISHING REVISION  DESC-ECT	b. REVISION COMPLETED (Signature)  Gary Zahn		c. DATE SIGNED (YYMMDD) 93-08-17						

REVISIONS																			
LTR	DESCRIPTION	DATE (YR-MO-DA)	APPROVED																
A	Change to military drawing format. Page 8, table I; change group A subgroup for +V <sub>R</sub> and -V <sub>R</sub> ; add end-point electrical limits for +V <sub>RINT</sub> and -V <sub>RINT</sub> . Page 10; change output offset adjust and temperature effect for device types 03 and 04 trim circuits.	86-12-31	W. Heckman																
B	Add device types 05 and 06. Inactivate case outline X. Add case outlines C, Y, and 3. Add vendors CAGE 33256 and 34707. Change drawing CAGE to 67268. Editorial changes throughout.	89-08-01	W. Heckman																
C	Changed to reflect MIL-H-38534 processing. Update document. Editorial changes throughout.	92-12-22	K.A. Cottongim																

THE ORIGINAL FIRST PAGE OF THIS DRAWING HAS BEEN REPLACED.

**CURRENT CAGE CODE 67268**

REV																			
SHEET																			
REV	C																		
SHEET	15																		

REV STATUS OF SHEETS	REV	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	SHEET	1	2	3	4	5	6	7	8	9	10	11	12	13	14			

PMIC N/A  <div style="text-align: center;"> <b>STANDARDIZED MILITARY DRAWING</b> </div> <p style="font-size: small;">THIS DRAWING IS AVAILABLE FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE</p> <p style="text-align: center;">AMSC N/A</p>	PREPARED BY Donald R. Osborne  CHECKED BY Ray Monnin  APPROVED BY William K. Heckman  DRAWING APPROVAL DATE 86-04-28  REVISION LEVEL  A	<div style="text-align: center;">                 DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444             </div> <div style="text-align: center; margin-top: 20px;"> <b>MICROCIRCUIT, LINEAR, PRECISION VOLTAGE REFERENCES, THIN FILM, HYBRID</b> </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 15%;">SIZE <b>A</b></td> <td style="width: 35%;">CAGE CODE <b>14933</b></td> <td style="width: 50%; text-align: center;"><b>85030</b></td> </tr> </table> <div style="margin-top: 10px;">                 SHEET      1      OF      15             </div>	SIZE <b>A</b>	CAGE CODE <b>14933</b>	<b>85030</b>
SIZE <b>A</b>	CAGE CODE <b>14933</b>	<b>85030</b>			

## 1. SCOPE

1.1 Scope. This drawing describes device requirements for class H hybrid microcircuits to be processed in accordance with MIL-H-38534.

1.2 Part or Identifying Number (PIN). The complete PIN shall be as shown in the following example:

<u>85030</u>	<u>01</u>	<u>X</u>	<u>X</u>
Drawing number	Device type (see 1.2.1)	Case outline (see 1.2.2)	Lead finish (see 1.2.3)

1.2.1 Device type(s). The device type(s) shall identify the circuit function as follows:

<u>Device type</u>	<u>Generic number</u>	<u>Circuit function</u>
01, 02	2700	Precision +10.000-volt reference
03, 04	2702	Precision $\pm$ 10.000-volt reference
05, 06	2701	Precision -10.000-volt reference

1.2.2 Case outline(s). The case outline(s) shall be as designated in MIL-STD-1835 and as follows:

<u>Outline letter</u>	<u>Descriptive designator</u>	<u>Terminals</u>	<u>Package style</u>
C	GDIP1-T14	14	Dual-in-line
X	See figure 1	14	Dual-in-line
Y	See figure 1	14	Dual-in-line
3	CQCC1-N28	28	Square leadless chip-carrier

1.2.3 Lead finish. The lead finish shall be as specified in MIL-H-38534. Finish letter "X" shall not be marked on the microcircuit or its packaging. The "X" designation is for use in specifications when lead finishes A, B, and C are considered acceptable and interchangeable without preference.

## 1.3 Absolute maximum ratings.

Supply voltage ( $V_S$ ):	
$V_{CC}$ (device types 01, 02, 03, 04) .....	+20 V dc
$V_{EE}$ (device types 03, 04, 05, 06) .....	-20 V dc
Power dissipation ( $P_D$ ), $T_A = +25^\circ\text{C}$ :	
Device types 01, 02, 05, 06 .....	300 mW
Device types 03, 04 .....	450 mW
Storage temperature range .....	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Lead temperature (soldering, 10 seconds) .....	$+300^\circ\text{C}$
Short circuit protection (to GND) .....	Continuous
Thermal resistance:	
Junction-to-case ( $\theta_{JC}$ ):	
Cases C and 3 .....	See MIL-STD-1835
Case X .....	$7^\circ\text{C/W}$
Case Y .....	$8^\circ\text{C/W}$
Junction-to-ambient ( $\theta_{JA}$ ):	
Case X .....	$30^\circ\text{C/W}$
Case Y .....	$25^\circ\text{C/W}$

## 1.4 Recommended operating conditions.

Supply voltage range ( $V_{CC}$ ) .....	+13.5 V dc to +16.5 V dc
Supply voltage range ( $V_{EE}$ ) .....	-13.5 V dc to -16.5 V dc
Output current .....	5 mA 1/
Ambient operating temperature range ( $T_A$ ) .....	$-55^\circ\text{C}$ to $+125^\circ\text{C}$

1/ With resistive load to pin 7 (common).

<b>STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444</b>	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>2</b>

## 2. APPLICABLE DOCUMENTS

2.1 Government specification and standards. Unless otherwise specified, the following specification and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards specified in the solicitation, form a part of this drawing to the extent specified herein.

### SPECIFICATION

#### MILITARY

MIL-H-38534 - Hybrid Microcircuits, General Specification for.

### STANDARDS

#### MILITARY

MIL-STD-883 - Test Methods and Procedures for Microelectronics.

MIL-STD-1835 - Microcircuit Case Outlines.

(Copies of the specification and standards required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Order of precedence. In the event of a conflict between the text of this drawing and the references cited herein, the text of this drawing shall take precedence.

## 3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with MIL-H-38534 and as specified herein.

3.2 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-H-38534 and herein.

3.2.1 Case outline(s). The case outline(s) shall be in accordance with 1.2.2 herein.

3.2.2 Terminal connections. The terminal connections shall be as specified on figure 2.

3.2.3 Trim circuits. The trim circuits shall be as specified on figure 3.

3.3 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in table I and shall apply over the full specified operating temperature range.

3.4 Electrical test requirements. The electrical test requirements shall be the subgroups specified in table II. The electrical tests for each subgroup are described in table I.

3.5 Marking. Marking shall be in accordance with MIL-H-38534. The part shall be marked with the PIN listed in 1.2 herein. In addition, the manufacturer's PIN may also be marked as listed in QML-38534 (see 6.6 herein).

3.6 Manufacturer eligibility. In addition to the general requirements of MIL-H-38534, the manufacturer of the part described herein shall maintain the electrical test data (variables format) from the initial quality conformance inspection group A lot sample, produced on the certified line, for each device type listed herein. The data should also include a summary of all parameters manually tested, and for those which, if any, are guaranteed. This data shall be maintained under document revision level control by the manufacturer and be made available to the preparing activity (DESC-EC) upon request.

3.7 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply in QML-38534 (see 6.6 herein). The certificate of compliance submitted to DESC-EC prior to listing as an approved source of supply shall affirm that the manufacturer's product meets the requirements of MIL-H-38534 and the requirements herein.

3.8 Certificate of conformance. A certificate of conformance as required in MIL-H-38534 shall be provided with each lot of microcircuits delivered to this drawing.

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>3</b>

TABLE I. Electrical performance characteristics.

Test	Symbol	Conditions 1/ -55° C ≤ T <sub>A</sub> ≤ +125° C unless otherwise specified		Group A subgroups	Device type	Limits		Unit
						Min	Max	
Selection output error 2/	+V <sub>R</sub>	+10.000 V output	Initial	4	01	-5.0	+5.0	mV
			End-point	5,6		-8.0	+8.0	
		+10.000 V output	Initial	4	02,04	-2.5	+2.5	
			End-point	5,6		-5.5	+5.5	
		+10.000 V output	Initial	4	03	-5.0	+5.0	
			End-point	5,6		-10	+10	
	-V <sub>R</sub>	-10.000 V output	Initial	4	03,05	+5.0	-5.0	
			End-point	5,6		+10	-10	
		-10.000 V output	Initial	4	04,06	+2.5	-2.5	
			End-point	5,6		+5.5	-5.5	
Interim output error	+V <sub>RINT</sub>	+10.000 V output T <sub>A</sub> = +25° C	Initial	1	01,02, 03,04	-5	+5	
			End-point			-10	+10	
	-V <sub>RINT</sub>	-10.000 V output T <sub>A</sub> = +25° C	Initial	1	03,04, 05,06	+5	-5	
			End-point			+10	-10	
Output adjust range for trim circuits (see figure 3)	+V <sub>RADJ</sub>	+10.000 V output, T <sub>A</sub> = +25° C		1	01,02, 03,04	-20	+20	
	-V <sub>RADJ</sub>	-10.000 V output, T <sub>A</sub> = +25° C		1	03,04, 05,06	+20	-20	
Quiescent current  I <sub>CC</sub>	V <sub>CC</sub> = +15 V	V, no load, T <sub>A</sub> = +25° C		1	01,02		+14	mA
		V <sub>CC</sub> = +15 V V <sub>EE</sub> = -15 V, no load T <sub>A</sub> = +25° C		1	03,04		+17	
	I <sub>EE</sub>	V <sub>CC</sub> = +15 V, no load V <sub>EE</sub> = -15 V T <sub>A</sub> = +25° C		1	03,04		-4	
		V <sub>EE</sub> = -15 V, no load T <sub>A</sub> = +25° C		1	05,06		-9	

See footnotes at end of table.

<b>STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444</b>	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>4</b>

TABLE I. Electrical performance characteristics - Continued.

Test	Symbol	Conditions <sup>1/</sup> -55° C ≤ T <sub>A</sub> ≤ +125° C unless otherwise specified	Group A subgroups	Device type	Limits		Unit
					Min	Max	
Line regulation	+V <sub>RL</sub>	+10 V output, T <sub>A</sub> = +25° C, +13.5 V ≤ V <sub>CC</sub> ≤ +16.5 V	1	01,02, 03,04	-900	+900	μV
	-V <sub>RL</sub>	-10.000 V output, T <sub>A</sub> = +25° C, -13.5 V ≤ V <sub>EE</sub> ≤ -16.5 V	1	03,04, 05,06	+900	-900	
Load regulation	+V <sub>RLOAD</sub>	+10.000 V output, T <sub>A</sub> = +25° C, 0 ≤ I <sub>L</sub> ≤ 10 mA	1	01,02, 03,04	-500	+500	μV
	-V <sub>RLOAD</sub>	-10.000 V output, T <sub>A</sub> = +25° C, 0 ≤ I <sub>L</sub> ≤ 10 mA	1	03,04, 05,06	+500	-500	
Output current	+I <sub>L</sub>		1	01,02, 03,04	10		mA
			2,3		5		
	-I <sub>L</sub>		1	03,04, 05,06		10	
			2,3			5	
Output noise <sup>3/</sup>		V <sub>OUT</sub> = 10 V, no load, 0.1 Hz ≤ BW ≤ 10 Hz, T <sub>A</sub> = +25° C	4	01,02, 03,04, 05,06		150	μV/ p-p

<sup>1/</sup> Unless otherwise specified, V<sub>IN</sub> = +15 V, R<sub>L</sub> = 2 kΩ to pin 7 (common), all tests after 3 minutes warm-up period.

<sup>2/</sup> Output voltage change as a function of temperature is determined using the box method. Each device is tested at -55° C, +25° C, and +125° C.

At each temperature the output voltage (V<sub>OUT</sub>) must fall within the rectangular area bounded by the minimum and maximum temperatures. This method gives a maximum temperature coefficient of 9 ppm/° C and a typical value of 3 ppm/° C.

<sup>3/</sup> Parameter shall be tested as part of device initial characterization and after design and process changes. Parameter shall be guaranteed to limits specified in table I for all lots not specifically tested.

**STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444**

**SIZE  
A**

**85030**

**REVISION LEVEL  
C**

**SHEET  
5**

Case outline X.

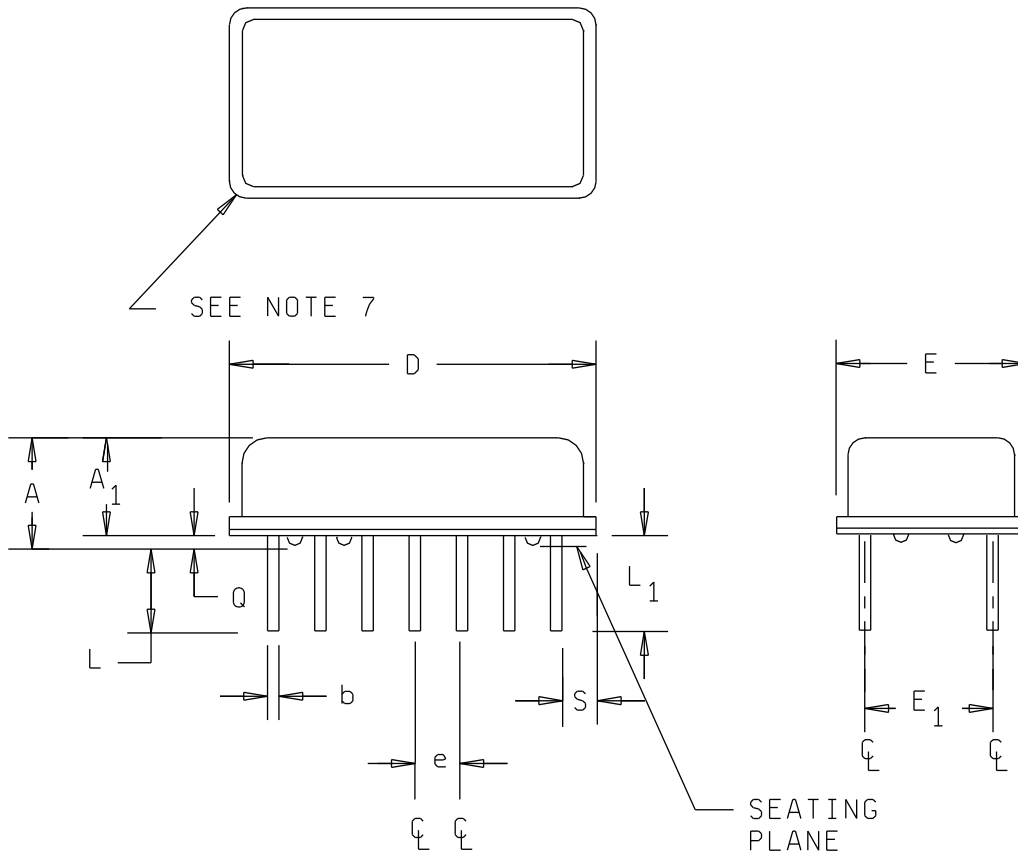


FIGURE 1. Case outline(s).

STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444

SIZE  
**A**

**85030**

REVISION LEVEL  
C

SHEET  
**6**



## Case outline X - Continued.

Dimensions					
Symbol	Inches		Millimeters		Notes
	Min	Max	Min	Max	
A	.215	.250	5.46	6.35	
A <sub>1</sub>	.175	.215	4.44	5.46	
b	.016	.020	0.41	0.51	8
φ <sub>b</sub>	.016	.020	0.41	0.51	4
D	.860	.885	21.84	22.48	4
E	.490	.520	12.45	13.21	7
E <sub>1</sub>	.295	.305	7.49	7.75	
e	.100 BSC		2.54 BSC		5, 8
L	.130	.255	3.30	6.48	
L <sub>1</sub>	.150	.290	3.81	7.37	
Q	.020	.035	0.51	0.89	3
S	.100	.160	2.54	4.07	
S <sub>1</sub>	.080	.180	2.03	4.57	
α	0°	15°	0°	15°	

## NOTES:

1. Index area: A notch, square-package corner, or a pin one index point shall be located adjacent to pin one and within the shaded area shown. The manufacturer's identification shall not be used as a pin one identification mark.
2. Dimension Q shall be measured from the seating plane to the base plane.
3. This dimension allows for off-center lid, meniscus, and weld squash.
4. The basic pin spacing is .100 inch (2.54 mm) between centerlines. Each pin centerline shall be located within ±.010 inch (0.25 mm) of its exact longitudinal position relative to pins 1 and 14.
5. Dimension S<sub>1</sub> is not used.
6. Lead center when α = 0°. E<sub>1</sub> shall be measured at the centerline of the leads (see MIL-STD-1835).
7. All leads: Increase maximum limit by .003 inch (0.08 mm) measured at the widest diameter when lead finish A or B is applied.
8. If this configuration is used, no polymer or organic materials shall be applied or molded to the bottom of the package or cover the leads.

FIGURE 1. Case outline(s) - Continued.

<b>STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444</b>	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>7</b>

Case outline Y.

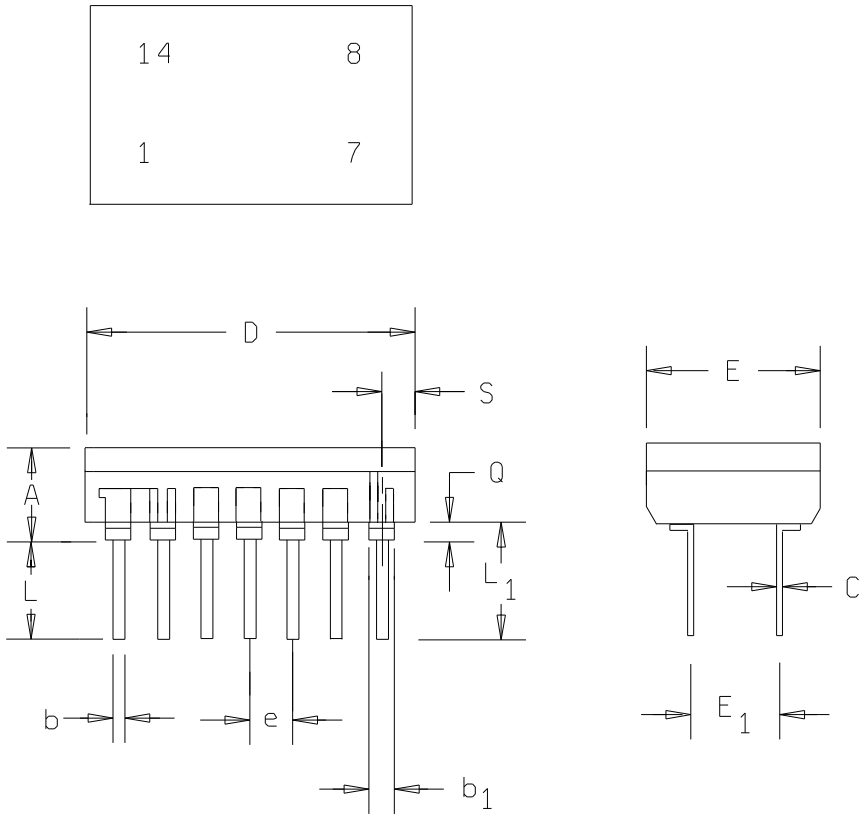


FIGURE 1. Case outline(s) - Continued.

STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444

SIZE  
**A**

**85030**

REVISION LEVEL  
C

SHEET  
**8**

## Case outline Y - Continued.

Dimensions					
Symbol	Inches		Millimeters		Notes
	Min	Max	Min	Max	
A	.140	.200	3.56	5.08	
b	.014	.023	0.36	0.58	
b <sub>1</sub>	.030	.070	0.76	1.78	2
c	.008	.015	0.20	0.38	
D	.770	.810	19.56	20.57	
E	.480	.510	12.19	12.95	
E <sub>1</sub>	.295	.305	7.49	7.75	6
e	0.100 BSC		2.54 BSC		4, 7
L	.150	.200	3.81	5.08	
L <sub>1</sub>	.180	---	4.57	---	
Q	.015	.035	0.38	0.89	3
S	---	.137	---	3.48	5
S <sub>1</sub>	.060	---	1.52	---	5

## NOTES:

1. Index area: A notch or a lead one identification mark is located adjacent to lead one.
2. The minimum limit for dimension b<sub>1</sub> may be .023 inch (0.58 mm) for all four corner leads only.
3. Dimension Q shall be measured from the seating plane to the base plane.
4. The basic pin spacing is .100 inch (2.54 mm) between centerlines.
5. Applies to all four corners.
6. E<sub>1</sub> shall be measured at the centerline of all the leads.

FIGURE 1. Case outline(s) - Continued.

<b>STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444</b>	<b>SIZE A</b>		<b>85030</b>
		<b>REVISION LEVEL C</b>	<b>SHEET 9</b>

Device types 01 and 02.

2700		
Terminal number	Terminal symbol	
Case outlines	C, X, Y	Z
1	NC	V <sub>O</sub> SEN
2	NC	-IN
3	NC	REF GND
4	NC	GND SEN
5	NC	NC
6	NC	NC
7	GND	NC
8	NC	NC
9	NC	NC
10	TEST POINT	NC
11	V <sub>CC</sub>	NC
12	+10 V ADJ	NC
13	+10 V OUT	NC
14	+10 V ADJ	NC
15		NC
16		NC
17		NC
18		V <sub>Z</sub>
19		ZENER GND
20		NC
21		NC
22		V <sub>OS</sub>
23		V <sub>OS</sub>
24		POWER GND
25		V <sub>CC</sub>
26		+IN
27		V <sub>O</sub> FORCE
28		+10 V REF OUT

Device types 03 and 04.

2702		
Terminal number	Terminal symbol	
Case outlines	C, X, Y	Z
1	-10 V ADJ	V <sub>O</sub> SEN
2	-10 V OUT	-IN
3	-10 V ADJ	REF GND
4	V <sub>EE</sub>	GND SEN
5	NC	NC
6	NC	NC
7	GND	-V <sub>OS</sub>
8	NC	-V <sub>OS</sub>
9	NC	V <sub>EE</sub>
10	TEST POINT	+IN
11	V <sub>CC</sub>	V <sub>CC</sub>
12	+10 V ADJ	NC
13	+10 V OUT	-IN
14	+10 V ADJ	V <sub>O</sub> FORCE
15		-10 V REF OUT
16		VO SENSE
17		+10 V IN
18		V <sub>Z</sub>
19		ZENER GND
20		NC
21		NC
22		V <sub>OS</sub>
23		V <sub>OS</sub>
24		POWER GND
25		V <sub>CC</sub>
26		+IN
27		V <sub>O</sub> FORCE
28		+10 V REF OUT

FIGURE 2. Terminal connections.

STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444

SIZE  
**A**

**85030**

REVISION LEVEL  
C

SHEET  
**10**

Device types 05 and 06.

2701		
Terminal number	Terminal symbol	
Case outlines	C, X, Y	Z
1	NC	NC
2	NC	NC
3	NC	REF GND
4	NC	GND SENSE
5	NC	NC
6	NC	NC
7	GND	-V <sub>OS</sub>
8	NC	-V <sub>OS</sub>
9	NC	V <sub>EE</sub>
10	TEST POINT	+IN
11	V <sub>EE</sub>	NC
12	-10 V ADJ	PWR GND
13	-10 V OUT	-IN
14	-10 V ADJ	V <sub>O</sub> FORCE
15		V <sub>O</sub> SENSE
16		V <sub>O</sub> SENSE
17		NC
18		V <sub>Z</sub>
19		ZENER GND
20		NC
21		NC
22		NC
23		NC
24		NC
25		NC
26		NC
27		NC
28		NC

FIGURE 2. Terminal connections - Continued.

<b>STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444</b>	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>11</b>

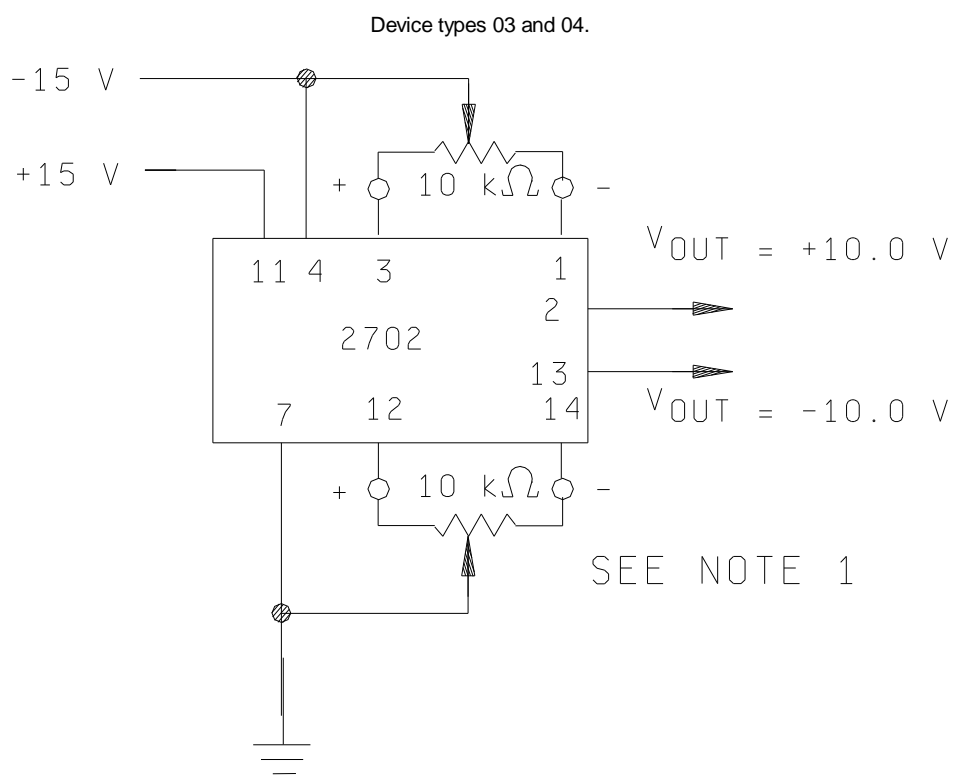
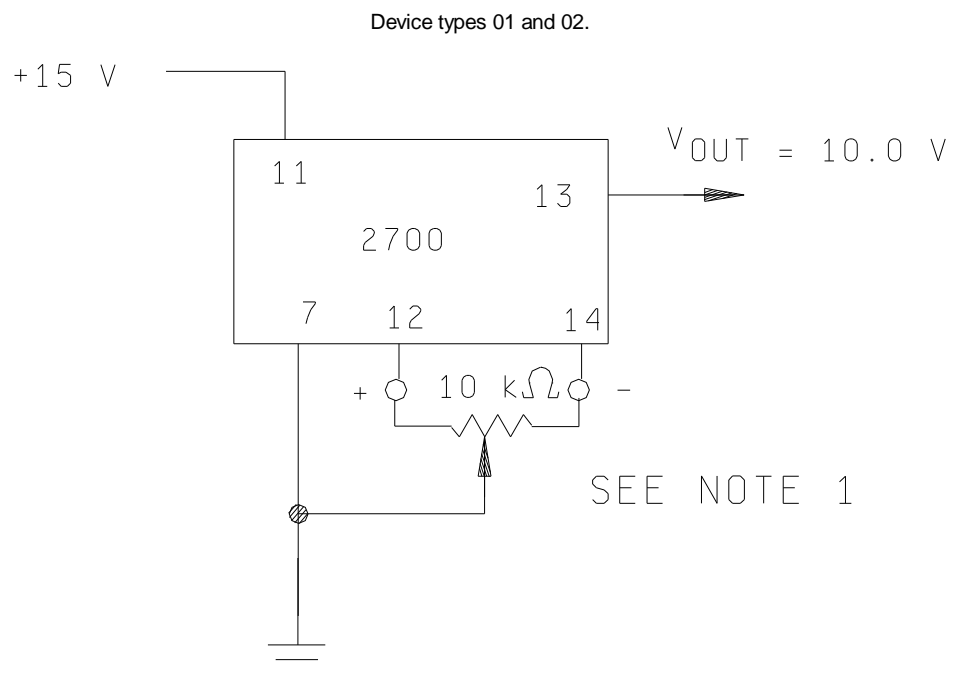


FIGURE 3. Trim circuit(s).

STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444

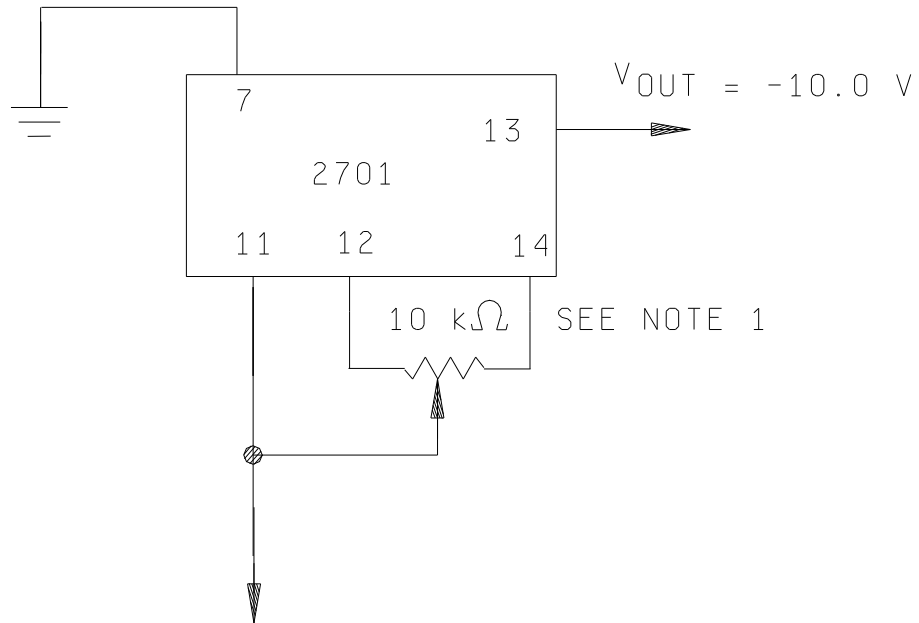
SIZE  
**A**

**85030**

REVISION LEVEL  
C

SHEET  
**12**

Device types 05 and 06.



NOTES:

1. External 10 kΩ potentiometer provides a  $\pm 20\text{ mV}$  minimum output offset adjust. Temperature effect is  $4\text{ }\mu\text{V}/^\circ\text{C}$  per mV of offset correction (external adjustment optional).
2. Dual-in-line package only.

FIGURE 3. Trim circuit(s) - Continued.

STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444

SIZE  
**A**

**85030**

REVISION LEVEL  
C

SHEET  
**13**

TABLE II. Electrical test requirements.

MIL-STD-883 test requirements	Subgroups (in accordance with method 5008, group test table)
Interim electrical parameters	---
Final electrical test parameters	1*,2,3,4
Group A test requirements	1,2,3,4,5,6
Group C end-point electrical parameters	1

\* PDA applies to subgroup 1.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection procedures shall be in accordance with MIL-H-38534.

4.2 Screening. Screening shall be in accordance with MIL-H-38534. The following additional criteria shall apply:

a. Burn-in test, method 1015 of MIL-STD-883.

(1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DESC-EC or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1015 of MIL-STD-883.

(2)  $T_A$  as specified in accordance with table I of method 1015 of MIL-STD-883.

b. Interim and final electrical test parameters shall be as specified in table II herein, except interim electrical parameter tests prior to burn-in are optional at the discretion of the manufacturer.

4.3 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-H-38534 and as specified herein.

4.3.1 Group A inspection. Group A inspection shall be in accordance with MIL-H-38534 and as follows:

a. Tests shall be as specified in table II herein.

b. Subgroups 7, 8, 9, 10, and 11 shall be omitted.

4.3.2 Group B inspection. Group B inspection shall be in accordance with MIL-H-38534.

**STANDARDIZED  
MILITARY DRAWING  
DEFENSE ELECTRONICS SUPPLY CENTER  
DAYTON, OHIO 45444**

SIZE  
**A**

**85030**

REVISION LEVEL  
C

SHEET  
**14**



4.3.3 Group C inspection. Group C inspection shall be in accordance with MIL-H-38534 and as follows:

- a. End-point electrical parameters shall be as specified in table II herein.
- b. Steady-state life test, method 1005 of MIL-STD-883.
  - (1) Test condition A, B, C, or D. The test circuit shall be maintained by the manufacturer under document revision level control and shall be made available to either DESC-EC or the acquiring activity upon request. Also, the test circuit shall specify the inputs, outputs, biases, and power dissipation, as applicable, in accordance with the intent specified in test method 1005 of MIL-STD-883.
  - (2)  $T_A$  as specified in accordance with table I of method 1005 of MIL-STD-883.
  - (3) Test duration: 1,000 hours, except as permitted by method 1005 of MIL-STD-883.

4.3.4 Group D inspection. Group D inspection shall be in accordance with MIL-H-38534.

## 5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-H-38534.

## 6. NOTES

6.1 Intended use. Microcircuits conforming to this drawing are intended for use for Government microcircuit applications (original equipment), design applications, and logistics purposes.

6.2 Replaceability. Microcircuits covered by this drawing will replace the same generic device covered by a contractor-prepared specification or drawing.

6.3 Configuration control of SMD's. All proposed changes to existing SMD's will be coordinated with the users of record for the individual documents. This coordination will be accomplished in accordance with MIL-STD-481 using DD Form 1693, Engineering Change Proposal (Short Form).

6.4 Record of users. Military and industrial users shall inform Defense Electronics Supply Center when a system application requires configuration control and the applicable SMD. DESC will maintain a record of users and this list will be used for coordination and distribution of changes to the drawings. Users of drawings covering microelectronics devices (FSC 5962) should contact DESC-EC, telephone (513) 296-6047.

6.5 Comments. Comments on this drawing should be directed to DESC-EC, Dayton, Ohio 45444, or telephone (513) 296-5373.

6.6 Approved sources of supply. Approved sources of supply are listed in QML-38534. Additional sources will be added to QML-38534 as they become available. The vendors listed in QML-38534 have agreed to this drawing and a certificate of compliance (see 3.7 herein) has been submitted to and accepted by DESC-EC.

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>15</b>

# STANDARDIZED MILITARY DRAWING SOURCE APPROVAL BULLETIN

DATE: 92-12-22

Approved sources of supply for SMD 85030 are listed below for immediate acquisition only and shall be added to QML-38534 during the next revision. QML-38534 will be revised to include the addition or deletion of sources. The vendors listed below have agreed to this drawing and a certificate of compliance has been submitted to and accepted by DESC-EC. This bulletin is superseded by the next dated revision of QML-38534.

Standardized military drawing PIN	Vendor CAGE number	Vendor similar PIN <u>1/</u>
8503001CX	33256	HS2700SD/883B
8503001XX	<u>2/</u>	2700SD/883B
8503001YX	51640	2700SD/883B
8503001YX	34707	HC2700SD/883B
85030013X	34707	HC2700SLCC/883B
8503002CX	33256	HS2700UD/883B
8503002XX	<u>2/</u>	2700UD/883B
8503002YX	51640	2700UD/883B
8503002YX	34707	HC2700UD/883B
85030023X	34707	HC2700ULCC/883B
8503003CX	33256	HS2702SD/883B
8503003XX	<u>2/</u>	2702SD/883B
8503003YX	51640	2702SD/883B
8503003YX	34707	HC2702SD/883B
85030033X	34707	HC2702SLCC/883B
8503004CX	33256	HS2702UD/883B
8503004XX	<u>2/</u>	2702UD/883B
8503004YX	51640	2702UD/883B
8503004YX	34707	HC2702UD/883B
85030043X	34707	HC2702ULCC/883B
8503005CX	33256	HS2701SD/883B
8503005YX	51640	2701SD/883B
8503005YX	34707	HC2701SD/883B
85030053X	34707	HC2701SLCC/883B
8503006CX	33256	HS2701UD/883B
8503006YX	51640	2701UD/883B
8503006YX	34707	HC2701UD/883B
85030063X	34707	HC2701ULCC/883B

1/ Caution. Do not use this number for item acquisition. Items acquired to this number may not satisfy the performance requirements of this drawing.

2/ Inactive for new design, no longer available from manufacturer.

1 of 2

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>16</b>

STANDARDIZED MILITARY DRAWING SOURCE APPROVAL BULLETIN - Continued.

DATE: 92-12-22

Vendor CAGE <u>number</u>	Vendor name <u>and address</u>
33256	Sipex Corporation Hybrid Systems Division 22 Linnell Circle Billerica, CA 01821
34031	Analog Devices, Incorporated Computer Labs Group 7910 Triad Center Drive Greensboro, NC 27409 Point of contact: Assembled Parts Division 7910 Triad Center Drive Greensboro, NC 27409
34707	Hycomp, Incorporated 165 Cedar Hill Street Marlborough, MA 01752

The information contained herein is disseminated for convenience only and the Government assumes no liability whatsoever for any inaccuracies in this information bulletin.

2 of 2

STANDARDIZED MILITARY DRAWING DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO 45444	SIZE <b>A</b>		<b>85030</b>
		REVISION LEVEL C	SHEET <b>17</b>